

Mn/DOT Office of Technical Support—Consultant Services

Work Type Definition

Rev. 1.1 (1/9/04)

Work Type Name	11.3 Construction Surveying	
Work Type Owner	Office of Construction and Innovative Contracting (Joel Williams)	
Work Type Input	Inputs include the most recent version of some or all of the following:	
	<ul style="list-style-type: none"> • Contract Documents • Mn/DOT Standard Specifications for Construction • Construction Surveying Work Plan and Schedule • Mn/DOT Survey and Mapping Manual • Staking Information Sheets • Mn/DOT Bituminous Manual • Mn/DOT Bridge Construction Manual • Mn/DOT Bridge Standard Plans • Mn/DOT Concrete Manual • Mn/DOT Contract Administration Manual • Mn/DOT Grading and Base Manual 	<ul style="list-style-type: none"> • Mn/DOT Standard Plans Manual • Mn/DOT Standard Plates Manual • Mn/DOT Standard Signs Manual • Mn/DOT Technical Manual • Mn/DOT Traffic Engineering Manual • Mn/DOT Labor Compliance Manual • Mn/DOT Technical Certification Handbook • Mn/DOT Technical Memorandums • Minnesota Uniform Traffic Control Device (M.U.T.C.D.) Manual • Mn/DOT Laboratory Manual • Mn/DOT Landscape Projects Manual
Work Type Definition	Construction Surveying is defined as accurately providing all necessary computations, stakes and marks to establish lines, slopes, elevations, points, and continuous profile grades in accordance with Mn/DOT Specification 1508 and the requirements shown in the Plan for Construction Staking; so that the Consultants are able to perform all the required work for the project in accordance with the construction contract requirements; and so that Consultant is able to complete all necessary inspection and Contract Administration duties. The surveying generally requires frequent, separate project visits by Consultant's personnel to the Project to accommodate the various stages of construction and inspection activities that occur.	
Work Type Output	Construction Surveying project-specific reports and documents.	

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<i>Specific Examples of Output</i>	<p>The work type output may include some or all of the following:</p> <ul style="list-style-type: none"> • Coordinates and reference ties for final alignment monumentation; • Reference ties for control station monumentation; minimum of two permanent monuments set; • Field notes that were used to set construction stakes, control the Project, and document monument location; • Survey data; Utility as-builts and changes to plan, in 3rd order accuracy; • Pay Item Quantity Documentation; Clear and Grub, rock excavation, muck, earth and gravel, seeding and sodding, etc.
<i>Quality Attributes of Output</i>	<ul style="list-style-type: none"> • All work performed in accordance with applicable specifications, rules & regulations; • All stakes and marks are set according to the Staking Information Sheets included in the plan according to Plan, Proposal, Standard Specifications and Mn/DOT Surveying and Mapping Manual • Traffic control devices are furnished and installed according to the current Field Manual for Temporary Traffic Control Zone Layouts (MN MUTCD); • Field operations are in accordance with Occupational Safety & Health Administration (OSHA) regulations and accepted safety practices. • Construction Surveying of all project construction is as indicated in Mn/DOT Specification 1508; • Reference points installed as needed for the use of any public utility crews that are accomplishing utility relocation or construction associated with the Construction Contract. • Bridge and Structure Construction staking (which includes setting and re-establishing Working Points and Reference Points by XYZ coordinates).

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11.3 Construction Surveying Minimum Technical Qualifications	
<i>Requirements of the Professional Staff</i>	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least four individuals are required, one of who is a Professional Land Surveyor or Professional Civil Engineer (to supervise the Construction Surveying). • Survey Party Chief • Instrument Man • Rod Man/ Chain Man
<i>Professional Certification/Licensure</i>	Land Surveyor: <ul style="list-style-type: none"> • Professional Land Surveyor, licensed in Minnesota Professional Engineer: <ul style="list-style-type: none"> • The engineer shall be a Minnesota Board Registered Professional Civil Engineer as specified under Minimum Number of Staff.
<i>Qualifying Experience</i>	Survey Party Chief: <ul style="list-style-type: none"> • Six (6) years of experience in construction and field surveying. • At least five (5) projects in prior three (3) years in the activities required for the category of work for which pre-qualification is applied.
<i>Requirements of the Firm</i>	
<i>Past Record & Experience of Firm</i>	<ul style="list-style-type: none"> • The firm must have a working knowledge (as demonstrated by the submittal requirements) of Mn/DOT Specifications 1508. • This requirement is to include at least five (5) projects in the preceding six (6) years of construction and field surveying. (Experience by qualified professional staff may be cited in lieu of experience by the firm if the firm has only been in business for less than three years.)

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<i>Submittal Requirements</i>	
<i>Requirements of Professional Staff</i>	<ul style="list-style-type: none"> Qualifying experience of staff in the category/level of work shall be documented by resumes and personal experience histories of the firm's principals or key personnel. Principals or key personnel are those individuals who satisfy the listed professional requirements and will perform subsequent project work. Documentation must include <i>reference</i> to qualifying projects, including a description of the project(s) and the individual roles and responsibilities on the project(s). In addition, list the applicable professional certifications and date acquired.
<i>Requirements of Firm</i>	<ul style="list-style-type: none"> Experience of the firm in the category shall be demonstrated by <i>reference</i> to completed projects, including a description of the project(s) and the firm's role and responsibilities on the project(s).
<i>Project Documentation</i>	<ul style="list-style-type: none"> Project examples, when required, may be submitted electronically (on CD's) or in hard copy (i.e. reports, plans, etc.).

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